
NASA-09250 (June 2003)
NATIONAL AERONAUTICS NASA
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SECTION 09250

GYPSUM BOARD
06/03

NOTE: Delete, revise, or add to the text in this
section to cover project requirements. Notes are
for designer information and will not appear in the
final project specification.

This broadscope section covers steel and wood
framed, nonload-bearing, gypsum wallboard
partitions, and backing boards.

PART 1 GENERAL

1.1 REFERENCES

NOTE: The following references should not be
manually edited except to add new references.
References not used in the text will automatically
be deleted from this section of the project
specification.

The publications listed below form a part of this section to the extent
referenced:

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A118.9 (1990) Test Methods and Specifications for
Cementitious Backer Units

ASTM INTERNATIONAL (ASTM)

ASTM C 36 (1995) Gypsum Wallboard

ASTM C 442 (1995) Gypsum Backing Board and Coreboard

ASTM C 475 (1994) Joint Compound and Joint Tape for
Finishing Gypsum Board

ASTM C 514	(2001) Standard Specification for Nails for the Application of Gypsum Board
ASTM C 630	(1993) Water-Resistant Gypsum Backing Board
ASTM C 645	(1995) Non-Load (Axial) Bearing Steel Studs, Runners (Track) and Rigid Furring Channels for Screw Applications of Gypsum Board
ASTM C 754	(1988) Installation of Steel Framing Members to Receive Screw-Attached Gypsum

UNDERWRITERS LABORATORIES (UL)

UL Fire Resist Dir	(2001) Fire Resistance Directory
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1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01330, "Submittal Procedures," and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.

The following shall be submitted in accordance with Section 01330, "Submittal Procedures," in sufficient detail to show full compliance with the specification:

SD-03 Product Data

Manufacturer's Catalog Data shall be submitted for the following items:

- Joint Tape
- Joint Compound
- Metal Trim
- Metal Accessories
- Fasteners
- Adhesive
- Regular Gypsum Wallboard
- Insulating Gypsum Wallboard
- Fire-Retardant Gypsum Wallboard
- Regular Gypsum Backing Board
- Moisture-Resistant Gypsum Backing Board
- Metal Framing Materials
- Joint Materials
- Cementitious Backing Board

PART 2 PRODUCTS

2.1 GYPSUM WALLBOARD

Regular Gypsum Wallboard shall be in accordance with ASTM C 36 and shall be [1/2] [5/8]-inch [12.7] [15.9] millimeter thick with tapered edges.

Insulating Gypsum Wallboard shall be in accordance with ASTM C 36 and shall be [1/2] [5/8]-inch [12.7] [15.9] millimeter thick Grade R, Form c and covered with bright, finished aluminum foil on back surface.

Fire-Retardant Gypsum Wallboard shall be in accordance with UL Fire Resist Dir and shall be [1/2] [5/8]-inch [12.7] [15.9] millimeter Type X.

2.2 GYPSUM BACKING BOARD

Regular Gypsum Backing Board shall conform to ASTM C 442 and shall be at least [1/2]-inch [12.7] millimeter [_____] thick [when used as the first ply of a two-ply application], [_____] [48]-inch [1200] millimeter wide, and in maximum practical length for end use.

Moisture-Resistant Gypsum Backing Board shall conform to ASTM C 630 water-repellent-treated core with Class 2 water-repellent surface, Form a, tapered edge, at least [_____] [1/2]-inch [12.7] millimeter thick.

2.3 CEMENTITIOUS BACKING BOARD

Cementitious backing board shall conform to ANSI A118.9 and shall be at least [7/16] [1/2]-inch [11.1] [12.7] millimeter [_____] thick with square edges.

Backing board shall be 36-inch 900 millimeter wide and in maximum practical length for end use.

2.4 METAL FRAMING MATERIALS

2.4.1 Studs

Studs and floor and ceiling runners shall be electrogalvanized, cold-rolled steel conforming to ASTM C 645.

Metal studs shall be formed, zinc-coated sections of [channel] [Z]-shape, of .0179 inch 0.45 millimeter minimum thickness, and of widths indicated on the drawings. The stud flanges that come in contact with gypsum wallboard shall be a minimum of [1-1/4] [1-7/16] inch [32] [37] millimeter wide, with a 1/4-inch 6 millimeter stiffening lip with turned or folded edges. Holes shall be regularly punched in studs to facilitate installation of electrical wiring, conduit, or horizontal bracing.

Floor and ceiling runners shall be not less than .0179-inch 0.45 millimeter thick steel before galvanizing, with 1-1/4-inch 32 millimeter flanges, sized to nest with steel stud.

Angle runners shall be 1-3/8 inch by 7/8 inch 35 millimeter by 22 millimeter

and not less than 0.0299 inch 0.76 millimeter thick.

2.4.2 Ceilings

2.4.2.1 Hangers and Inserts

Wire hangers shall be galvanized soft steel wire not less than 0.1620 inch 0.41 millimeter diameter, conforming to ASTM C 754.

Hot-dip galvanized flat steel hangers shall be 1 by 3/16 inch. Galvanized concrete insert-type rod hangers may be substituted for wire hangers.

Tie wires shall be galvanized soft steel wire not less than 0.0625 inch 1.6 millimeter diameter conforming to ASTM C 754.

Clips used in lieu of tie wire shall be galvanized steel equivalent in holding power to that provided by the tie wires recommended by the gypsum board manufacturer.

2.4.2.2 Suspension, Furring, and Channels

Channels shall be formed from galvanized steel sheets conforming to ASTM C 645.

Main runner channels shall be 1-1/2-inch 38 millimeter, [hot] [cold]-rolled, galvanized steel. Hot-rolled channels shall weight not less than 1.12 pounds per linear foot 16.3 newton per meter. Cold-rolled channels shall be not less than 0.059 inch 1.50 millimeter thick uncoated steel with flanges at least 19/32-inch 15 millimeter wide.

Furring channels shall be roll-formed, galvanized steel not less than 0.021 inch 0.53 millimeter thick before galvanizing, with steel face width of 1-3/8 inch 35 millimeter and a depth of 7/8 inch 22 millimeter, and shall have reinforced, folded edges.

Furring channels for miscellaneous framing shall be 3/4-inch 19 millimeter wide, cold-rolled galvanized steel not less than 0.059 inch 1.50 millimeter thick before galvanizing, and shall weigh not less than 330 pounds per 1,000 linear feet 4.8 newton per meter.

Nailing channels 3/4 by 7/8 inch 19 by 22 millimeter shall be cold-rolled, electrogalvanized steel, not less than 0.021-inch 0.53 millimeter thick before galvanizing, and shall be formed with a continuous lip to retain ratchet nail fasteners.

2.5 JOINT MATERIALS

NOTE: Component materials shall be compatible. Do
not use fiberglass tape with conventional
ready-mixed, powders, or chemically setting joint
compounds.

Joint Tape shall be plain or perforated material conforming to ASTM C 475, Type II, Styles 1 and 2.

Joint Compound shall be an adhesive, [with] [without] fillers, conforming to ASTM C 475, Type I, Style [1] [2] [3].

[Control joint material shall be one piece roll-formed zinc 0.013-inch 0.33 millimeter thick formed 7/16-inch 11.1 millimeter deep by 1/4-inch 6.4 millimeter wide, with a perforated flange 7/8-inch 22 millimeter wide on each side of the joint opening with a protective plastic strip.]

[Control joints shall be formed of casing bead trim and installed back to back over separate framing or furring members. A space of [_____] [3/16] inch [5] millimeter shall be maintained between opposite casing beads.]

2.6 METAL FASTENERS

2.6.1 Gypsum Fasteners

Nails shall be steel, diamond point, with mechanically deformed shank, and shall conform to ASTM C 514.

Screws shall be steel, self-tapping drywall type, with bugle head self-drilling point. The length shall be as recommended by the drywall manufacturer for the type of system being installed.

2.6.2 Cementitious Board Fasteners

[1 1/2-inch 38 millimeter long hot-dipped galvanized roofing nails] [1 1/4-inch 32 millimeter long screws] as recommended by the cementitious backing board manufacturer.

2.7 METAL ACCESSORIES AND METAL TRIM

Corner beads shall be 0.012 inch 0.305 millimeter minimum thickness, hot-dip galvanized steel, with 1-1/4-by 1-1/4-inch 32 by 32 millimeter flanges and a 1/8-inch 3 millimeter beaded corner.

Corner beads shall be formed to an angle of 90 degrees and shall be either zinc-coated steel not lighter than .012-inch 0.305 millimeter before coating with wings not less than 7/8-inch 22 millimeter wide and perforated for nails and cement treatment; or they shall be formed of zinc-coated steel or protected aluminum with legs approximately 3/4-inch 19 millimeter wide and cemented under pressure with a rubber-base Adhesive to tough-paper jointing-tape wings not less than 1-inch 25 millimeter wide.

Casing trim shall be 0.0158-inch 0.401 millimeter nominal thickness, hot-dip galvanized steel channel, depth as required for wallboard, with attached tape flange.

PART 3 EXECUTION

3.1 WALL INSTALLATION

Runners shall be furnished in the longest practical lengths with butt joints between lengths and attached to concrete slabs with [concrete stud nails] [anchors at 24 inch 600 millimeter on center]. The track shall be attached to [metal ceiling grilles with a double strand of 18-gage 1.3 millimeter tie wire spaced at no more than 16 inch 400 millimeter on center], [steel framing or steel joists with machine bolts at 24 inch 600 millimeter on center], [suspended finish ceiling with [toggle] [molly bolts],] [wood framing with [lag bolts] [wood screws] at 24 inch 600 millimeter on center].

Steel studs shall be size indicated, spaced at 24 inch 600 millimeter on center. A maximum height span of 12 feet 3658 millimeter shall be used for 2-1/2-inch 64 millimeter studs. Maximum height span for 3-5/8-inch 92 millimeter studs shall be 16 feet 4877 millimeter.

Studs for pipe chases, ventilating shaft framing, and steel column or beam fireproofing shall be the size indicated, spaced 16 inch 400 millimeter on center.

Studs shall be positioned plumb in ceiling and floor runners and attached with a least one self-tapping screw on each side of the stud ends. Studs shall be installed in continuous lengths with no splicing.

Studs shall be placed no more than 1/2 inch 13 millimeter from door frames, framed openings, abutting partitions and partition corners. Studs shall be securely anchored direct or with spacers to door frames by [bolt] [screw] attachment.

Midheight horizontal bracing shall be continuous in partition heights above 8 feet 6 inch 2590 millimeter. Bracing shall be standard runner channel for specified stud size. Channel shall be secured rigidly in place at each stud.

Head and jamb framing at door openings shall consist of a tube made up of one runner channel and one stud. Tubes at door jambs shall extend the full height of the partition and shall be fastened together with screws at minimum of 24 inch 600 millimeter center-to-center each flange. The tube over the door head shall be fastened together with a minimum of three screws for each flange.

Where gypsum wallboard partitions do not extend to the underside of construction above, they shall be braced at the top channel with a V-frame perpendicular to the line of the partition located 18 feet 8 inch 5690 millimeter maximum on center where partitioning is not intersected or otherwise braced. The V-braces shall be composed of two 2-by 2-by 1/8-inch 50 by 50 by 3 millimeter angles attached to metal clips. When brace is in final position, it shall be welded, or holes shall be drilled and the brace bolted in permanent position. Partitions shall not exceed 16 feet 4880 millimeter in height.

3.2 CEILING INSTALLATION

[Main runner channels suspended or furred from the bottom chord of steel joists shall have the wire hanger looped around the runner channel and twisted a minimum of three times around itself. Hangers shall be plumb and spaced at not more than 4 feet 1200 millimeter on center.]

[Main runner channels suspended from concrete slab construction shall have hanger wires embedded in concrete construction by an approved method before concrete is placed, or they shall have hanger wires attached to approved inserts. Hanger straps shall be hung plumb and connected with 3/8-inch M10 (3/8 inch) galvanized bolts and nuts to anchors made of hanger strap and set in the concrete. Hangers shall be spaced at not more than 4 feet 1200 millimeter on center. Runner channels shall be braced in position true and rigid and as required to prevent distortion. At least 1-inch 25 millimeter clear space shall be maintained between channel and wall or other building elements.]

[Main runner channels shall be spliced with 12-inch 300 millimeter nested laps and tied securely near each end of the splice with two loops of 8-gage 4.1 millimeter hanger wire. Splices shall be staggered.]

[Furring channels or resilient channels shall be installed at right angles to main runner channels or structural supporting members, and shall be fastened with clips or tie wires at a maximum spacing of 48 inch 1200 millimeter on center. Resilient channels shall be screw fastened to wood members. Furring channels or resilient channels shall be spaced at 24 inch 600 millimeter on center unless otherwise indicated. Channels shall be extended to within 2 inch 50 millimeter of perimeter walls and abutting elements. Channels shall not be anchored or buried in the wall.]

[Furring shall be spliced with 8-inch 200 millimeter nested laps and tied securely near each of the splice with two loops of 16-gage 1.6 millimeter tie wire. Splices shall be staggered.]

[The suspension grilles shall be reinforced with 3/4-inch 19 millimeter, cold-rolled channels or with furring channels at light troffers or any openings that interrupt the main runner or furring channels. Reinforcing channels shall be wire tied to and parallel to the main runner channels.]

3.3 JOINTS

The number of end joints shall be minimized. Edges of boards shall be butted together but shall not be forced.

Joints shall be staggered and not aligned with the edge of an opening nor positioned so that the corners of four boards will meet at a common point.

All abutting ends or edge joints shall occur over solid bearing joists and shall be fitted neatly and accurately. Wallboard shall be supported as recommended by the manufacturer, with additional framing at all cutouts and openings.

Joints between wallboard panels and joints at metal trim shall be

reinforced with joint tape and embedding-type joint compound and concealed with at least two applications of finishing compound in accordance with the printed instructions of the manufacturer of the gypsum wallboard. Screw depressions shall be filled with at least three coats of joint compound. Flanges at corner beads, edge trim, and control joints shall be concealed with at least two applications of joint compound, feathered and sanded smooth.

The finished wallboard application shall be plumb and true, with all joints aligned to within a 1/16-inch 1.6 millimeter tolerance and with all surfaces shimmed and aligned to a plane and even surface having a maximum variation of 1/8 inch 3 millimeter in 8 feet 2440 millimeter.

-- End of Section --